MECHANICAL IDENTIFICATION FOR WATER FACILITIES
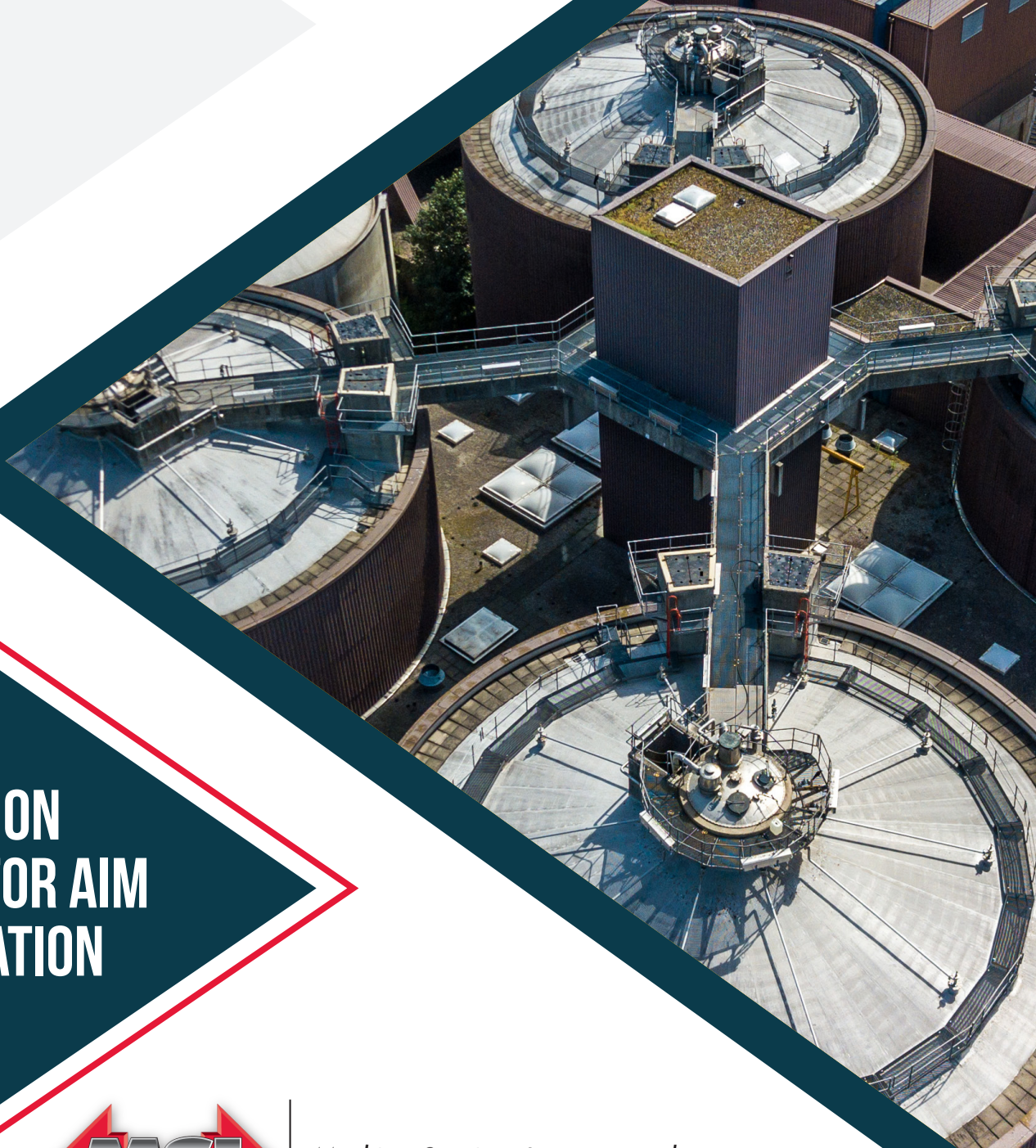
IDENTIFICATION SOLUTIONS FOR AIM IMPLEMENTATION

MSI | Marking Services Incorporated

At MSI we provide state of the art asset identification solutions that support the digital implementation of field assets utilizing our AIM Technology. With over 30 year of experience, we facilitate logical, thorough, and consistent communication between assets and employees. As a single-source for all identification, we also maintain in-house engineering, installation, and digital implementation services. This single-source philosophy provides our customers with a better product, a better service, and a better result. We can help your organization implement a labeling and digital asset management strategy that centers around:

- Increased Safety of Personnel
- Reduced Operational Risk
- Regulatory Compliance
- Digital Asset & Document Management
- Employee Training & Awareness
- Emergency Response Readiness

MSI Turnkey Path to Digital Transformation

Step 1: Consultation & Analysis ⟹ **Step 2:** Recommendations & Scope Definition

Step 3: Field Validation & Engineering ⟹ **Step 4:** Manufacturing & Installation

Step 5: AIM Implementation ⟹ **Step 6:** Activation

Letter from our Water & Wastewater Project Team:

We would like to introduce you to Marking Services Incorporated. Our company is a global leader in mechanical identification and associated services, including support for digital implementation using our AIM Technology. In this brochure we provide a broad overview of our products and capabilities, which provide a foundation for your organization's digital implementation. We are here to help your organization solve common problems in the water/wastewater industry.

Consider this an invitation to contact us and discuss your specific needs and plans for facility improvement and digital access to information. We are here to help you achieve your objectives.

Proudly Made in the USA

The **Environmental Protection Agency (EPA)** works with six national organizations that support drinking water and wastewater utilities to promote effective utility management based on a series of **attributes of effectively managed water sector utilities**. With regards to identification and labeling, MSI focuses on the following attributes to enhance the efforts towards a more safe and efficient water facility:

Product Quality

Water Product Quality is critical for both consumption and discharge to the environment. A properly labeled plant and digital leveraging of critical asset information increases efficiency in water operations. Increased efficiency ensures better quality.

Operational Resiliency

When things go wrong, it is critical that operators bring facilities back online as soon as possible. Having assets properly tagged and labeled mitigates confusion and downtime by allowing personnel to access critical information at the asset, saving time.

Operational Optimization

Our products contribute to the efficiency of daily operational tasks. Employees who are better equipped and more knowledgeable are more effective in their work. Effective operations means cost efficiency and facility safety.

Infrastructure Stability

A proper identification system combined with AIM Technology helps maintain the condition of all assets throughout their lifecycle. It also ensures consistent identification and reliablity as well as future solutions for growing needs including repairs, service and replacement.

We work directly with facility owners to develop tailored solutions to facility management. Our knowledgeable experts will engineer a customized approach to ensure that your asset identification and digital management system is sustainable for the long term.

That's the MSI Difference

MS-995 Pipe Markers

MS-995 pipe markers convey pertinent information taken from client P&IDs to the actual piping within the facility. They are manufactured for extended life in harsh surroundings involving exposure to direct sunlight, salt water, harsh process chemicals, acids, caustics, and hydrocarbons.

- Pre-coiled markers install easily by wrapping entirely around the pipe diameter and self-sealing with a permanent lock down strip
- Installation can be on either bare or insulated pipe, and requires no surface preparation for attachment since they bond to themselves, not the pipe surface
- Can be removed and reinstalled
- ASME A13.1-1996 colors available

Custom pipe markers available to meet plant specific needs for color, pipe diameter and information (including From/To, P&ID numbers, line numbers, pipe contents, flow direction, etc.)
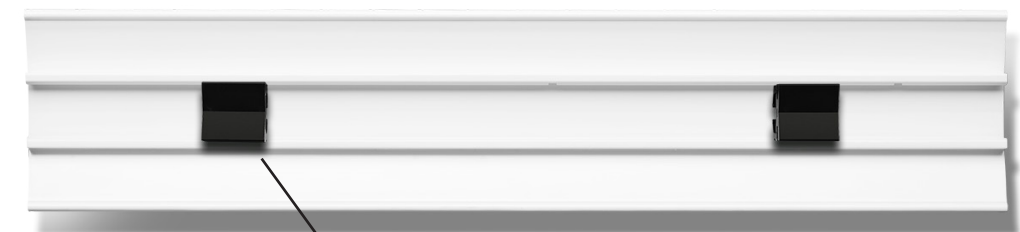

*Customized MS-995 Coiled Marker with from/to information.

MS-995 Carrier Pipe Markers

The MS-995 Rigid Curved Carrier is a strap-on type pipe marker consisting of a mechanically applied MS-995 pipe label and two slotted nylon feet. The MS-995 strap-on pipe markers may be used in all applications of piping from ¾" and greater in outside diameter including insulation. A coated stainless-steel banding is recommended.

These carriers are of a universal design, with full length slots on the reverse side to allow for a wide variety of attachment points. The foot assembly may be strapped to the pipe prior to attaching the carrier or the carrier assembly may be strapped as a unit to the pipe, allowing for maximum installation flexibility.

The MS-1000™ clear top laminate on the carrier label functions as an ultra-violet filter, providing maximum protection against fading due to prolonged exposure to direct sunlight. This also provides excellent resistance to hydrocarbons, acids, bases and most solvents. The curved shape reduces the direct constant UV exposure to sunlight and helps readability. These carrier assemblies have been designed and tested to withstand up to 150 mph wind velocity for one hour, when installed as recommended. Complies with ANSI 13.1.

From/to information accurately depicts the source and destination of the contents in the pipe relative to your facility.

The design of the carrier allows the marker to sit off the pipe surface, removing it from the effects of the pipe and its contents.

Engraved Plastic Tags

Bright and durable, these engraved plastic equipment tags and signs are designed for labeling pumps, fans, air handling units and other equipment.

- Engraving provides high contrast between letter color and background color for easy visibility
- Excellent for in-house maintenance programs – use to verify machinery numbers shown on work orders which reduces costly errors and accidental shutdowns
- Ideal for providing building graphics and door signs
- For indoor applications
- Standard tags are engraved on 1/16" plastic stock with mounting holes or adhesive backing [⅛" thick, 3 ply also available]
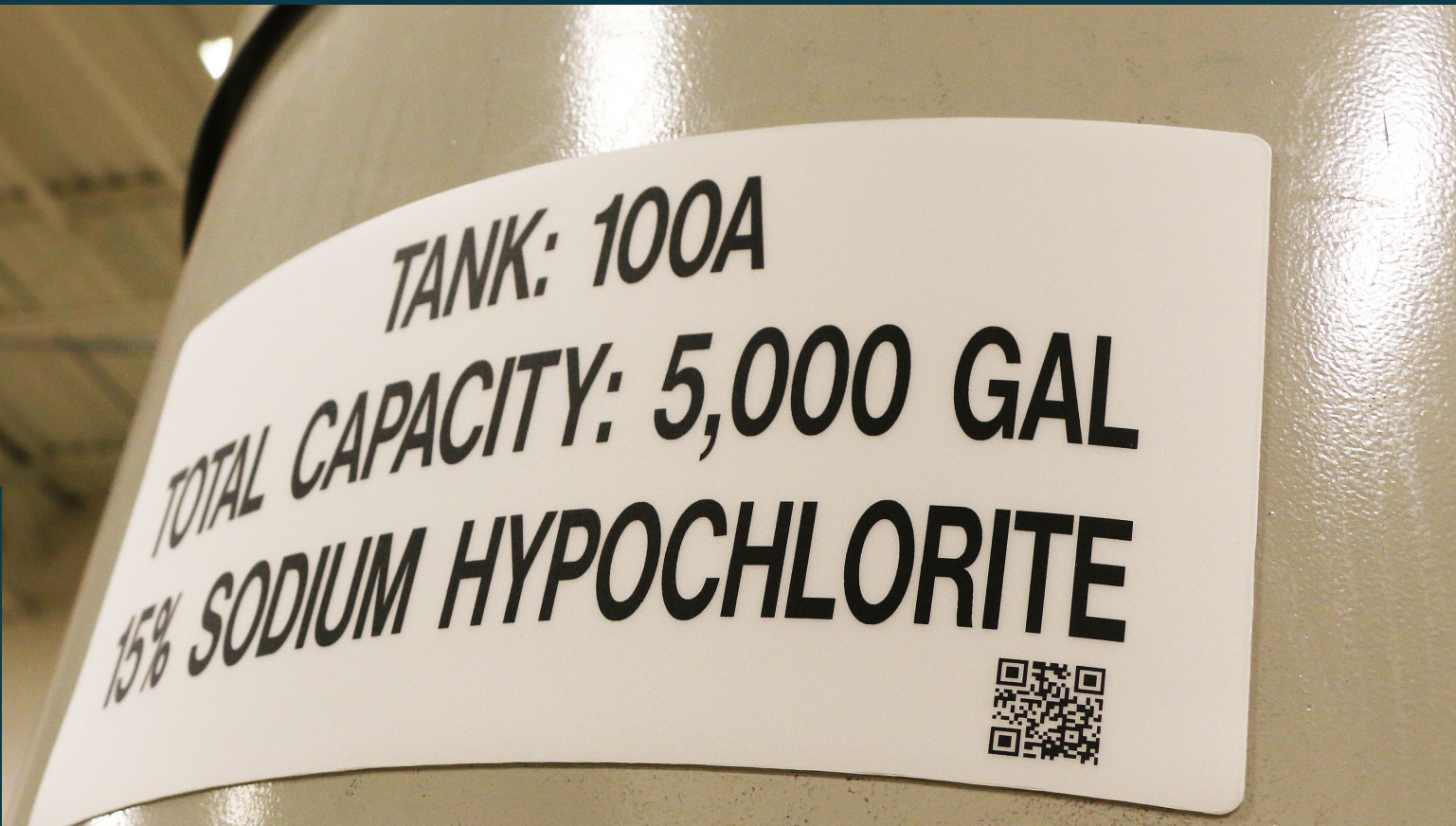
Stainless Steel Tags

Designed to withstand high temperatures and corrosive or caustic substances. Provides maximum resistance to the effects of weathering and chemicals. Stainless Steel Valve Tags are available in a variety of sizes with or without holes. Type 316 stainless steel is ideal for the highly corrosive environments of process and water/wastewater facilities. Tags have blackened text making it easy to read. These durable tags have text permanently engraved and are made to withstand significant handling and abrasive environments and remain completely legible. The lasering process leaves the tag with an indelible, tactile finish.

MS-215 Max-Tek™ Tags

MS-215 tags are constructed of printed legends sealed between two layers of chemically resistant plastic. This sealed construction offers excellent resistance to chemicals, abrasion, and the fading effects of the sun.

- High-performance tags protect the graphics from environmental conditions
- Rigid and Flexible available
- Complete printing flexibility – each unique tag can include multiple lines of text, equipment number, operation and maintenance instructions, safety precautions, or other critical asset information
- Service temperature range: -40° F to 200° F
- Available with adhesive or grommets
- Multiple sizes available
- Double sided tags available
- Photoluminescent material available
- Reflective material available

Looking for product specs? Scan the QR Code to see our Technical Data Sheets!

TANK: 100A
TOTAL CAPACITY: 5,000 GAL
15% SODIUM HYPOCHLORITE

Custom MS-215 Max-Tek™ Signs

MS-215 Max-Tek™ identification signs can be used in a variety of ways including naming and numbering each tank, vessel, or piece of equipment.

- Available in two thicknesses: MS–215 R [125 mil] for rigid requirements and MS-215 F [30 mil] for flexible applications
- For mounting signs on curved surfaces, we recommend the flexible construction
- Excellent outdoor life and chemical resistance
- Available with QR codes
- Multiple color combinations available
- Adhesive or grommets available
- Sizing for your specification

27DVG-740503

FROM TANK 3020A
TO TANK 4650B

PTL-180-EF-01

Stainless Steel Signs

- Type 316 Stainless Steel
- Standard tags have round corners and mounting holes for ease of installation (adhesive available)
- Black Text is laser engraved for visibility and durability
- Available with QR codes

Stainless Steel Equipment Signs are ideal for:

- Nameplates on machinery that continually run at high temperatures
- Valve or instrument identification in highly corrosive or caustic environments

CONTROL PANEL
NORTH & EAST WING
VALVES N501 - N568
VALVES E601 - E704

Operational & Safety Signs

Operational & Safety Signs provide personnel with necessary information regarding hazard identification, operating procedures and equipment identification. We offer a number of stock options.

- High performance MS-215R Max-Tek™ rigid plastic signs offer the ultimate in outdoor durability (available with grommets or adhesive)
- MS-900 Self Adhesive signs (SAS) are available for environments not subject to washdown chemicals or UV exposure
- Custom materials and signs available

DANGER
CONFINED SPACE ENTRY

For Compliance with OSHA Right-to-Know Laws

MS-215 Max-Tek™ rigid identification signs can help you name and number each tank, vessel or piece of equipment.

- Extremely durable MS-215 Max-Tek™ signs are designed to be printed with the unique name and number of each tank or vessel
- Available with grommets or adhesive
- Flexible signs available
- Excellent outdoor life and chemical resistance
- Available with QR codes

EA-243
THIS PROCESS STREAM MAY CONTAIN THE FOLLOWING: BENZENE, TOLUENE, XYLENE (BTX) / HYDROGENATED PYGAS (HPG)
DANGER

Engineering Services to Verify To/From and Update P&ID's

Our engineering services use a professional, comprehensive approach in creating an efficient identification program for your facility. We deliver value by engineering a complete program consisting of clear, concise identification labeling that expedites commissioning, start-up, and long-term operational efficiency.

Our field engineers walk down all lines to determine specific pipe marker locations. This procedure enables as-built verification while confirming pipe insulation diameters, line size, from/to information and marker quantity for each line. Not only that, but we can maintain line lists and P&ID information in an engineering facility asset database. New processes or line changes can be recorded and maintained as part of the master database to ensure that changes are captured, and documents stay current.

Laser Scanning

Water facilities rely on accurate P&ID's, GA drawings, and asset databases. Quality information is often missing, especially in older facilities. MSI utilizes 3D laser scanning technology to collect data about a facility's operating environment to use in the development of accurate P&IDs and labeling of pipes and mechanical components.

The scan data is assembled to create an as-built representation of the facility and is used to create or update P&IDs and build an accurate bill of materials for pipe and asset labeling projects.

AIM Implementation & AIM Services

Digitizing your documents and creating a library can be a big undertaking. Our AIM Services team are experts at supporting clients in getting their asset information management system up and running. We will perform field surveys & audits, validate assets, find and upload documents as well as maintain your database to keep it accurate.

Commonly mined data includes warranty information, maintenance reports, schematics, drawings, commissioning reports, and user manuals.

Installation

Our turnkey installation systematically installs permanent asset identification without customers devoting personnel time or direct supervision. Our crews are experts at installing pipe labels and valve tags that enhance operator training, improve process safety management, and eliminate of the need to trace lines between rooms and floors.

Our installation crews function independently of client personnel. Focused solely on labeling, work scopes are completed in a timely, safe, and reliable manner.

Building a Foundation for AIM Implementation

Technology continues to be integrated into our everyday life and workflow environments. This means that organizations, facilities and municipalities must adapt to be prepared for a transition into digital asset and facility management. At MSI, we prepare you for this transition by setting the foundation for digital management.

The gateway to this foundation is with our QR-coded identification. By QR-coding your facilities' valve, equipment, and instrument tags you are opening the door to allow your assets to be properly managed through access to digital information using **AIM Mobile Technology**.

AIM Mobile Technology

AIM Mobile Technology is a user-friendly asset and document management application built for safer and more efficient operations. It allows personnel the ability to upload documents to a secure asset database and access them by scanning the associated QR-coded tag in the field. The documents and forms database can include anything that fits your needs including:

- Customized AIM Forms specific to unique needs
- Work Orders
- Preventative Maintenance Orders
- Inspection Checklists
- Maintenance & Service Manuals
- Schematics
- Drawings
- Warranty Information
- And More...

More than a mobile app for field personnel, AIM is also a browser-based desktop portal for administrative and operational functionality. This gives administrative access and control to see information within the database such as completed forms, rounds forms, work orders, time-stamped checklists and more in real time.
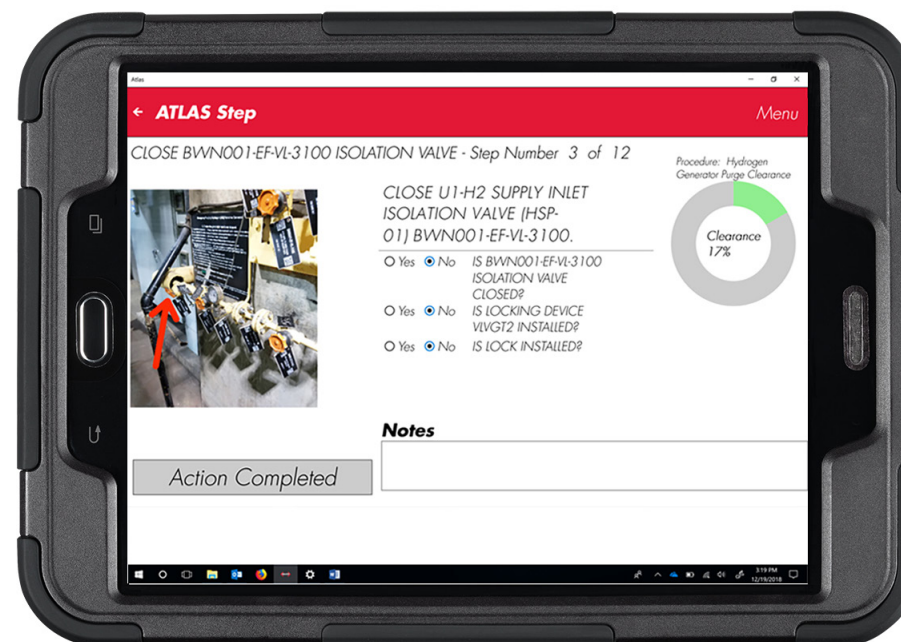
ATLAS - An AIM Module for Daily Procedures

ATLAS is an AIM Module built specifically for enhancing operational efficiency through interactive procedure management. This module works by attaching your plant procedures to AIM QR-coded asset tags. The application then walks personnel through the procedure at each critical point while simultaneously capturing the results of the tasks digitally, eliminating lengthy processes and enhancing user safety and efficiency.

How it Works

Utilizing a hand-held mobile device, a procedure is selected from a menu that has been pre-populated by you and stored within the device. Once the user scans the AIM QR-coded asset tag, they will be prompted to select the procedure related to that asset. They will then be required to perform the step-by-step instructions and can only move on from the procedure once the steps are complete. ATLAS will confirm that the correct procedure has been identified and capture all of the information in a digital and time-stamped library. This ensures that all of your electronic records are secure, accurate, time-stamped, and can be accessed 24/7.

Sample screen from an ATLAS procedure pictured

AIM Services

We understand that the implementation of digital asset management requires a lot of preparation, which is why we have a team of experts to assist in the process. Our **AIM Services** team is available to assist through data mining and digitizing required documents, performing field survey audits to identify and validate assets, tag assets, validate and upload documents, and maintain the AIM & ATLAS database to ensure it is compliance ready.

AIM Implementation Case Study

The Challenge

A large facility's maintenance and engineering teams needed an intuitive mobile technology application that would give them on-demand access to critical asset specific documents in their facility to achieve increased confidence and efficiency in Operations.

With limited resources to ensure critical asset documents were available on-demand, and that all assets were identified and inventoried on an on-going basis, **they turned to MSI for a solution.**

The Solution

MSI partnered with the facility to deliver AIM Mobile Technology and AIM Implementation Services, ensuring all assets in the facility were identified with a label that could be scanned using a mobile device. This allowed personnel to instantly view critical asset documents right at the asset location as well as establishing a valid and verified asset database.

Utilizing MSI's AIM Mobile Technology & AIM Implementation Service, they achieved:

Regulatory Compliance
MSI provided AIM Implementation Services to locate and label all assets in the field and recorded the data to be inventoried into a CMMS and the AIM application. During their last Audit, they were prepared to meet asset tagging and documentation requirements through the AIM services provided by MSI.

Operational Efficiency
AIM Technology provided access to critical asset documents in the field during construction and after commissioning in daily operations. Project turnover was more efficient, and personnel had greater confidence that requirements were being met during inspection.

A Secure Document Retention Plan
Spending time searching for critical asset information is in the past. Now, all important asset documents are stored in AIM's platform where they can be accessed 24/7.

> "We wanted a mobile application that was easy to use and could be managed and understood by everyone in our Operations. With MSI's help, we successfully leveraged our existing facility automation system and facility management system with AIM Mobile Technology and MSI's Field Implementation Services to create a process that is both effective and consistent."
>
> **– Director of Engineering**

MSI | *Marking Services Incorporated*

YOUR SINGLE SOURCE

✓ **Identification Products**
Pipe ID | Asset Tagging | Equipment Signs

✓ **Value-Added Services**
Engineering | Installation | Scanning

✓ **AIM Technology**
Asset & Document Management

CONTACT US TODAY!

MSI

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